

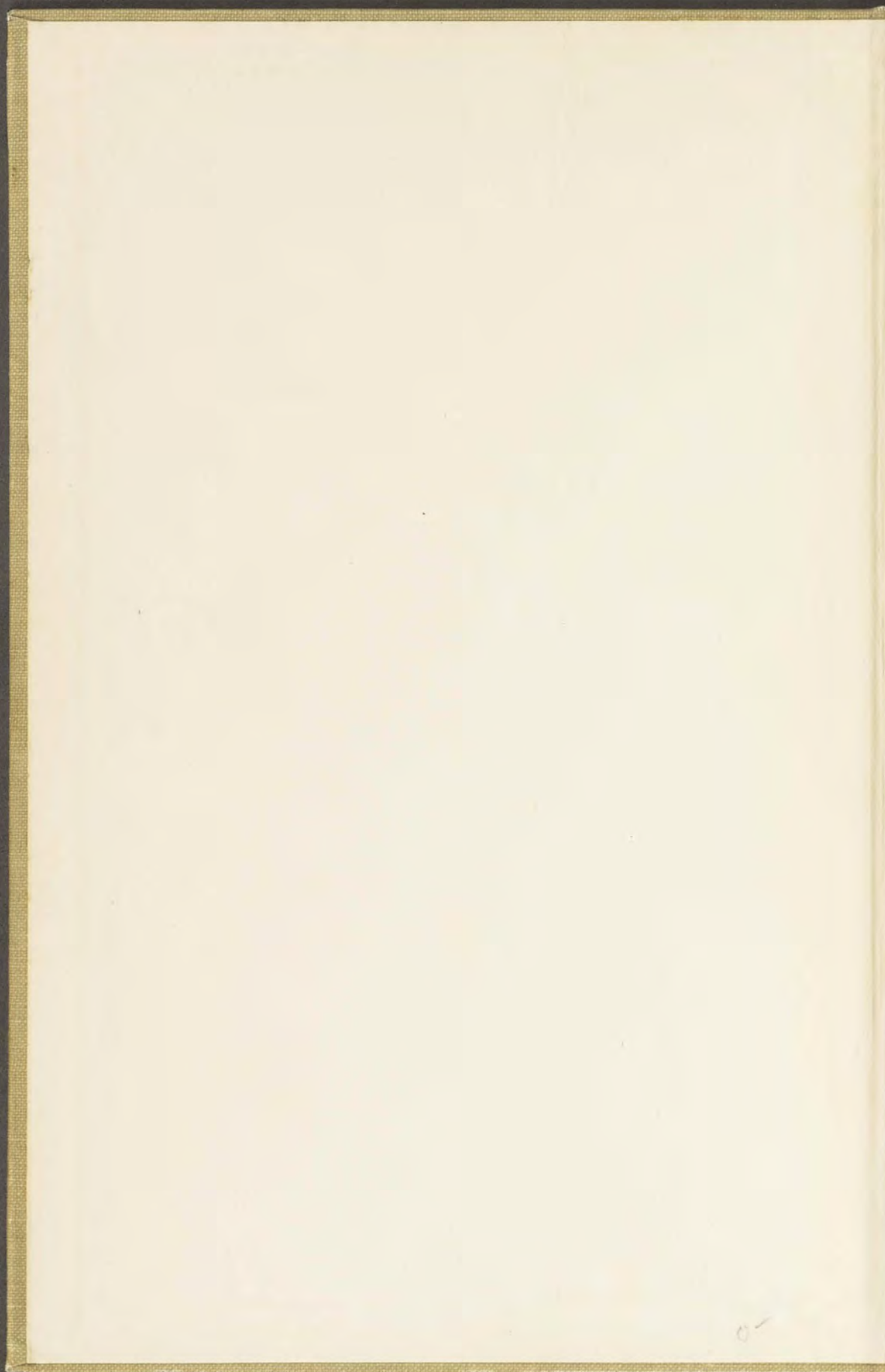
# DRAWING FOR ZINC ETCHING



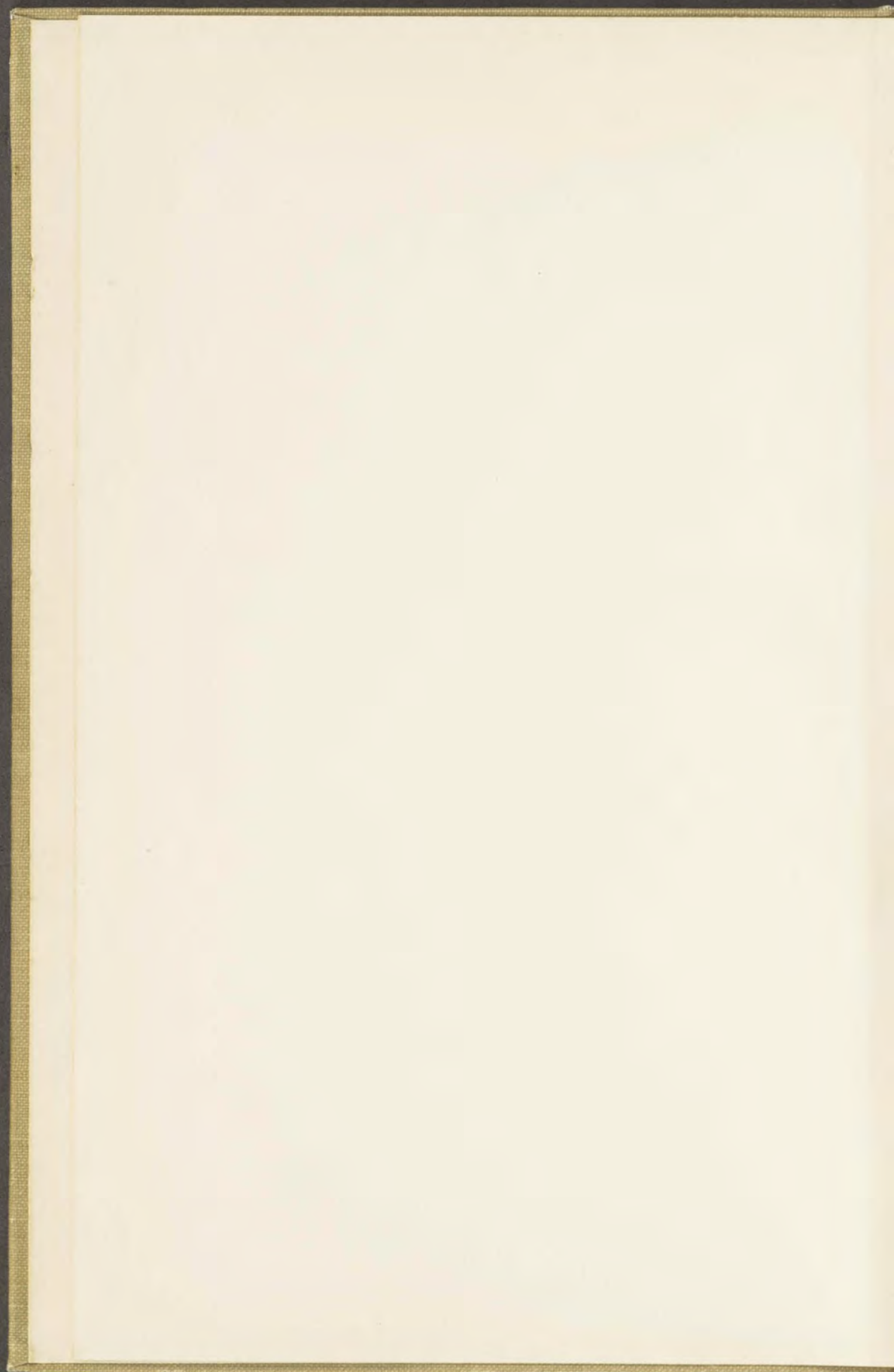
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BY  
RAY. J. MATASEK





*Ed. R. Smith*



Drawing for Zinc Etching





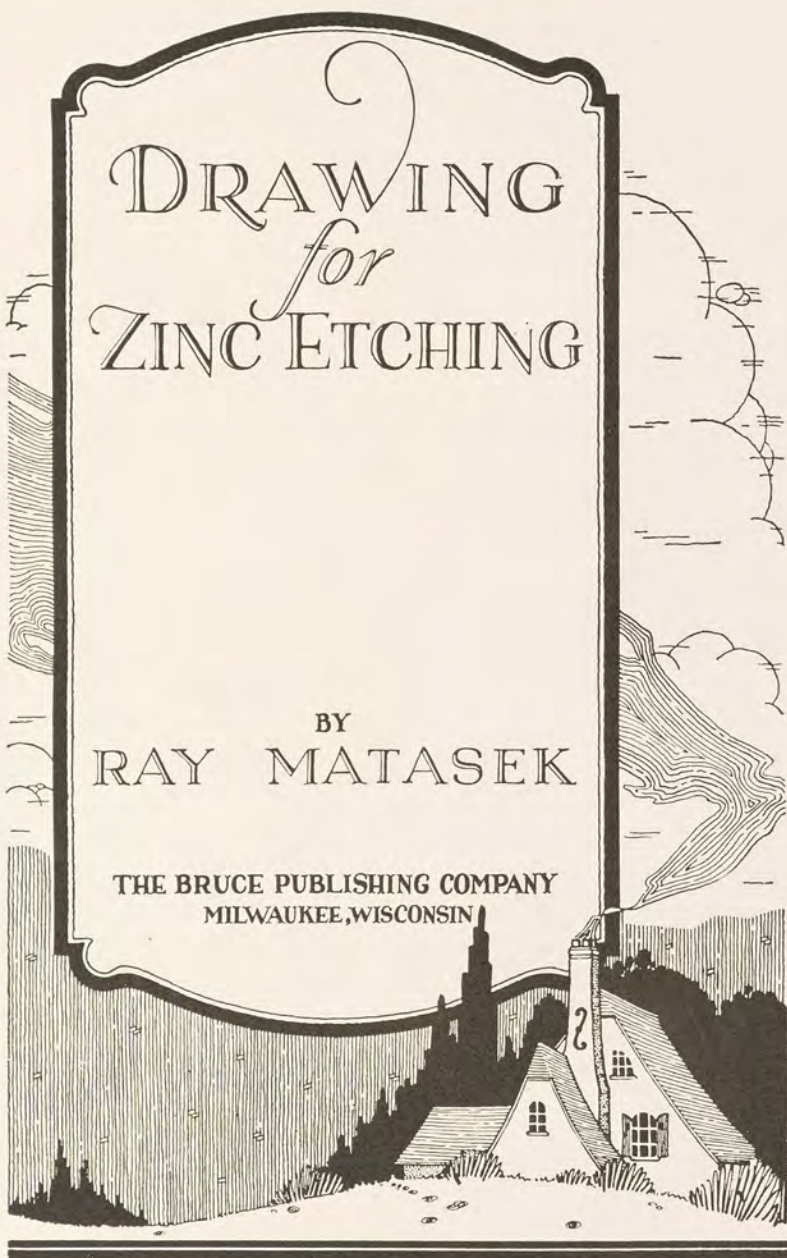
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# DRAWING *for* ZINC ETCHING

BY  
RAY MATASEK

THE BRUCE PUBLISHING COMPANY  
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# I

## PHOTO ENGRAVING

### ZINC ETCHING

**Z**INC etching, which is the most commonly used of photo engravings, is known by many different names such as, "line out," "line engraving," or just plain "zinc." There are no tones in zinc etching, just black and white, or a solid color. Wash drawings, photographs, oil paintings, etc., cannot be used for reproduction by zinc etching.

Zinc etchings can be made from any kind of copy that is made up of solid blacks and whites, such as India ink on white paper. Crayon drawings, typewritten copy, magazine clippings, etc., in fact anything of a similar nature, if properly prepared, can be used.

The finished engraving may be made smaller, the same size, or larger than the original drawing. Fig. 1, Plate 1, shows an original drawing from which a zinc cut is to be made. As a rule, however, the drawing is made from one and one-half to two times the size the reproduction is to be.

### PHOTOGRAPHING

The drawing to be reproduced is tacked to a large board at one end of a long frame. At the other end of the frame is a camera which can be moved forward and backward until the image on the ground glass of the camera is shown the desired size for the finished engraving. The ground glass is then removed from the camera, and a plate holder holding a wet sensitized plate, which was prepared by the operator, is put in its place. Strong electric lights are then thrown on the drawing and an exposure is made.

### THE NEGATIVE

After the plate has been exposed for from two to five minutes, the length of time necessary depending upon the nature of the drawing and the light, the negative is developed. It will be found that when looking at this negative, holding it against the light, it will appear just the reverse from the drawing. See Fig.

[Seven]





Plate 1

Taken from a drawing prepared by the Cramer-Krasselt Co., Milwaukee, Wis.

[Eight]

2, Plate 1. Notice that everything that is black in the original drawing appears as transparent glass in the negative, and whatever is white in the drawing appears as opaque black in the negative.

#### STRIPPING

When it is thoroughly dry, the film side of the plate is coated with a transparent solution of liquid rubber cement and again allowed to dry. A solution known as stripping collodion is then poured on it and again it is allowed to dry. It is then placed into an acetic acid bath until the film can be easily separated from the glass. The film is removed from the negative glass, is transferred to a quarter-inch plate glass and thoroughly dried. This is known as stripping. Fig. 3 shows the film on the plate glass.

#### PRINTING ON METAL

The plate glass with the negative film on it is placed in a frame face to face with a sensitized metal plate, either zinc or copper, and is exposed to a strong electric light. The light penetrates through the transparent parts of the film to the sensitized metal plate. The principle is the same as in printing an ordinary picture onto a piece of sensitized paper from a kodak film. Fig. 4, Plate 1, shows the print on the metal.

#### INKING

The metal plate is now taken from the frame. By means of a soft roller, a thin even coating of ink is then spread over the entire surface of the plate, after which it is washed in water.

#### WASHING

This washing removes the ink covering the plate, except those parts which were affected by the light filtering through the negative and which were insoluble in water. This leaves us a reversed reproduction of the drawing the desired size, as in all plates or types for letter press printing. Fig. 5, Plate 1, shows the inked zinc plate ready for etching.

#### BURNING IN

Before the metal plate can be etched, it must be dusted with a fine resinous powder, known as "dragon's blood," which sticks to the ink. This plate is then heated, or as the trade term has



it, "burned in." This burning in causes the dragon's blood to melt and combine with the ink, together forming an enamel which is acid proof. The back of the plate is made acid proof by a coating of asphaltum varnish.

#### ETCHING THE PLATE

After burning in, the plate is placed in a shallow tank which contains a solution of nitric acid. This tank is rocked by a mechanical device, thus causing the acid to eat evenly over the entire surface of the metal plate. The plate may also be placed into an etching machine where the acid is sprayed against the plate. The acid acts upon the surface of the plate not protected by the enamel, eating it away or lowering it, while the parts which are protected by the enamel are left standing in relief.

The metal plate is not allowed to remain in the acid solution until it has been etched to its final depth, as the acid is likely to eat under the enamel. This must be avoided if there are fine lines in the drawing.

To avoid this, after the plate has been immersed in the acid for a short time, it is removed from the acid and washed off in clean water. The plate is then brushed over with dragon's blood in four ways, from the top to the bottom, the right to the left, the bottom to the top, the left to the right, and is again burned in. After the plate has again been burned in, it is placed in the acid for another etching. Each time this process is gone through, it is known as a "bite." A shallow plate may have only one or two bites, while a very deep plate may have four or six bites. Fig. 6, Plate 1, shows the plate after it has been etched.

#### ROUTING AND BLOCKING

After the plate has been etched to the proper depth, it is mounted on a temporary block of wood about type high and placed on a routing machine, where all surplus metal on the sides of the cut and between the lines, which are far enough apart, is cut away. The metal is then taken from its temporary block on which it has been routed, and is mounted on a permanent block of either wood or metal.

[Ten]



### FINISHING

From the router, the engraving goes to the finisher who removes all small defects or raggedness with an engraver's tool, after which the plate is ready for proving.

### PROVING

The work is then proved. By this we mean that the prover puts the plate in a press and makes a print on paper to prove or show to the customer that the finished job is O. K. and true to the copy. Fig. 7, Plate 1, shows a proof of Fig. 1.

Zinc etchings are the cheapest engravings which can be made and are best for all around purposes, as they can be used on practically any kind of paper, from the cheapest to the most expensive enamel stock.



FIG. 1

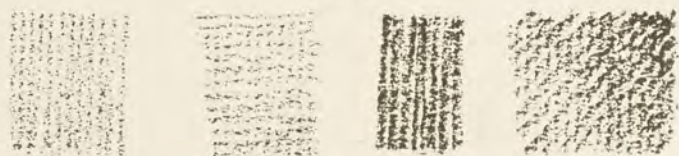


FIG. 2

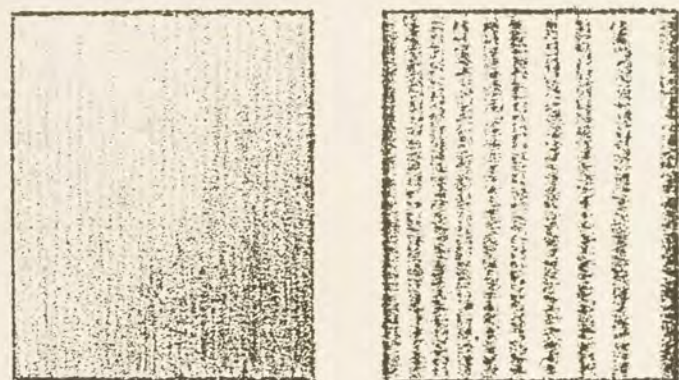
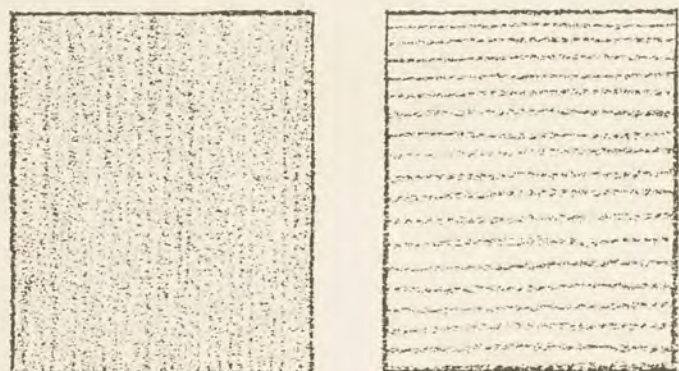


FIG. 3



## II

### CRAYON DRAWING

**C**RAYON is a very fascinating medium with which to work, but will prove a trifle difficult for beginners. After a crayon line has been made, it is not easily erased. Crayon drawings are used quite extensively for advertising and illustrating work, because, if handled correctly, they can be reproduced by etching in line. The crayon pencil is not shiny like the lead pencil, and is a pure black.

#### MATERIALS

The materials for drawing in crayon pencil are few and inexpensive.

#### CRAYON

There are several very good crayon pencils on the market. The illustrations for this text were made with Dixon's best black crayon pencil which the writer found very satisfactory. An emery board, or a piece of sandpaper, is necessary to keep a sharp point on the pencil.

#### PAPER

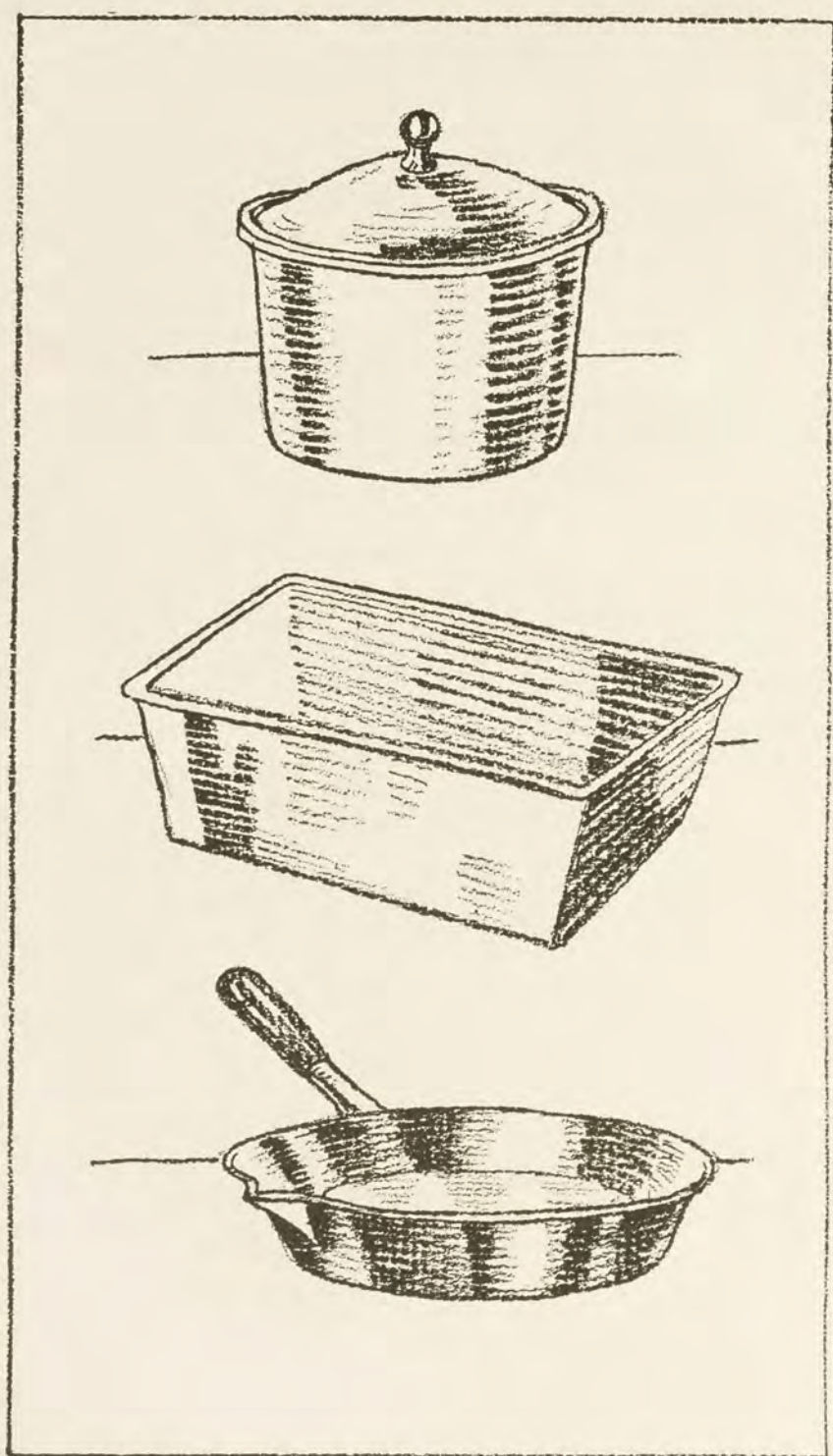
Several varieties of paper may be used. The technique employed will be largely determined by the paper. Strathmore charcoal paper is rather rough and is best suited to work which is to be reproduced in line. One can readily see that when a rough paper is used it will be necessary to keep the drawings large in order to get in the details. A good grade of wedding bristol may be used with very good results, and the drawings may be made much smaller without causing the detail to suffer. A decided grain, such as is found in charcoal paper, should be catered to and not antagonized. By this is meant that the style of technique is already prescribed. Make the lines correspond to the grain of the paper as much as possible.

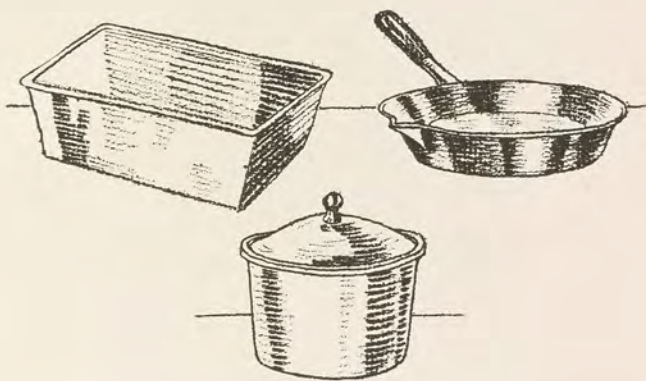
#### ERASER

A kneaded rubber eraser or the Eberhard Faber red or green erasers will be found useful, but it is always difficult to erase dark lines.

[Thirteen]









## LINES

It will be necessary to master the crayon pencil. For that reason an exercise in drawing lines and tones is given in the problems for this lesson.

Lines which run in every direction and are not evenly spaced show poor control of the hand and are, therefore, undesirable. Fig. 1, Plate 2, shows some of these undesirable lines full size.

Now note the lines in Fig. 2, Plate 2, and see the contrast. The light lines as well as the dark and wider lines are firm and even. The tones, too, are very even. This is desirable.

When blocking in a drawing which is to be finished in crayon, it is best to use a medium hard pencil for the preliminary work. If a mistake is made, it is easier to erase the pencil lines than it would be to erase a line made by the crayon. The crayon is used in the same way as the pencil. The materials used do not alter the rules of light and shade. Plate 3 shows some drawings made full size. The drawings on Plate 4 show reproductions of the same crayon drawings as shown on Plate 3 reduced to half-size. It also shows a portrait drawing made on paper with a hard surface.

## QUESTIONS

1. Why is it good to block out your drawing with a medium hard pencil?
2. What should determine the technique in crayon drawing?

## PROBLEMS

1. Draw four rectangles the same size as shown in Fig. 3, Plate 2. The work in these rectangles is to be practiced until mastered.
2. Copy the drawing shown in Plate 3. Use charcoal paper. Make these drawings the same size.
3. Make crayon drawings of the cooking utensils shown in Plate 5. Simplify the shadows and make each drawing twice the size on a separate sheet of paper.
4. Arrange some articles which can be found around the house, and make a crayon drawing.



### III

#### PEN AND INK DRAWING

**D**UE to the fact that photo engraving has superseded the old woodcut, and also to the fact that pen drawing can be excellently reproduced by photo engraving, pen drawing has come into its own. For illustrations, decorative work, architectural rendering, cartooning, lettering, in fact for most work, pen work reigns supreme. Pen drawing must be very direct, and for that reason a great amount of study is required.

##### MATERIALS

Gillot's No. 290 for medium lines, No. 303 for fine lines, and an Esterbrook bank pen No. 14 for heavy lines are excellent for work in pen and ink drawing. The student should, however, buy several different kinds of pens and use them until he finds those that are best suited to his purpose.

A pure, black, water-proof ink should be used. Higgin's, Post's, and Prang's water-proof inks are recommended.

A good grade of wedding bristol or coated bristol can be used. Whatman's hot pressed paper is very good. Illustration board is used at times, but is not always satisfactory. A good plan is to run the pen over the paper; if it produces a good firm line without any burrs or featherings, it will be safe to use.

There are often large masses in pen drawing which are to be filled in with black. For this purpose a No. 3 or a No. 4 red sable water color brush should be used. Always clean the brush thoroughly after using. If ink is left to dry in the brush, the brush will be ruined. Cleanliness in all branches of art work must be observed. The hands should always be clean, for no matter how well a drawing has been executed, if it has finger marks on it, it will not create a favorable impression.

The pen should not be held close to the point. At least an inch or more above the point of contact is recommended, as greater freedom of the hand and fingers is obtained. The longer the lines are drawn, the greater the distance should be between the hand and the point.

[Seventeen]





A medium soft pencil should be used to block out the drawing and to indicate the shadows. A HH pencil will be found very satisfactory. A few strokes of the pencil over the shadow side of the drawing will give a fair idea of how the drawing will look when finished.

Chinese white should be used to correct errors. The white must be absolutely clean, and when applied to an ink spot or error, care must be taken to cover the black mistake thoroughly. If the white has been put on too thin, the error may appear a dark gray in the drawing and reproduce as a black spot. It is best to make the drawing so carefully that few or no corrections are necessary. Small mistakes can be taken out with a pen knife, if this is done very carefully.

A reducing glass may be used when making a drawing for reproduction to see how the drawing will appear when reduced. In that way, if a drawing looks a little weak, it can be touched up before going to the engraver. The student should at this time refer to the chapter on the method of reproducing drawings by the line cut.

#### KINDS OF LINES

There is no blending of color from light to dark in line drawings as there is in wash drawings or in photographs. The gradation in light and shade in line drawing is obtained through the size and spacing of lines and dots.

The student should be very careful to have the lines intensely black all over. If part of the lines are a weak, dirty brown instead of black, a ragged uneven line in the reproduction will be the result, and the student alone is to be blamed. All of the lines should be firm and free, no matter how fine they are.

#### COLOR IN LINE CUTS

If a drawing were made on an intensely red sheet of paper in black ink, the result might be an entire black plate. The reason is that red, if intense, will photograph as black as the black ink. Blue will photograph white. Blue pencils are often used to make notations on drawings to be reproduced by the line cut method. Yellows, if intense, will photograph black. To





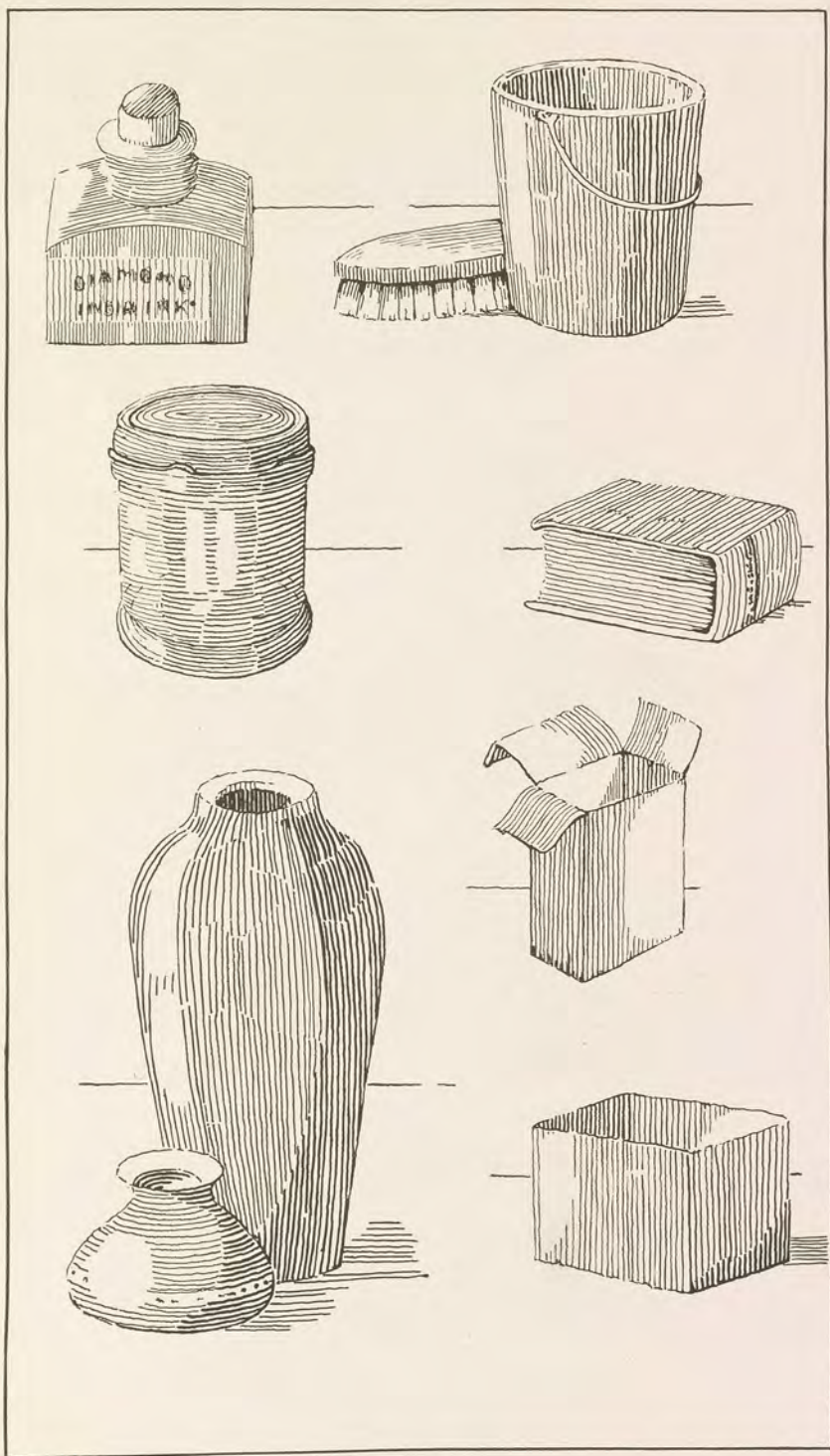
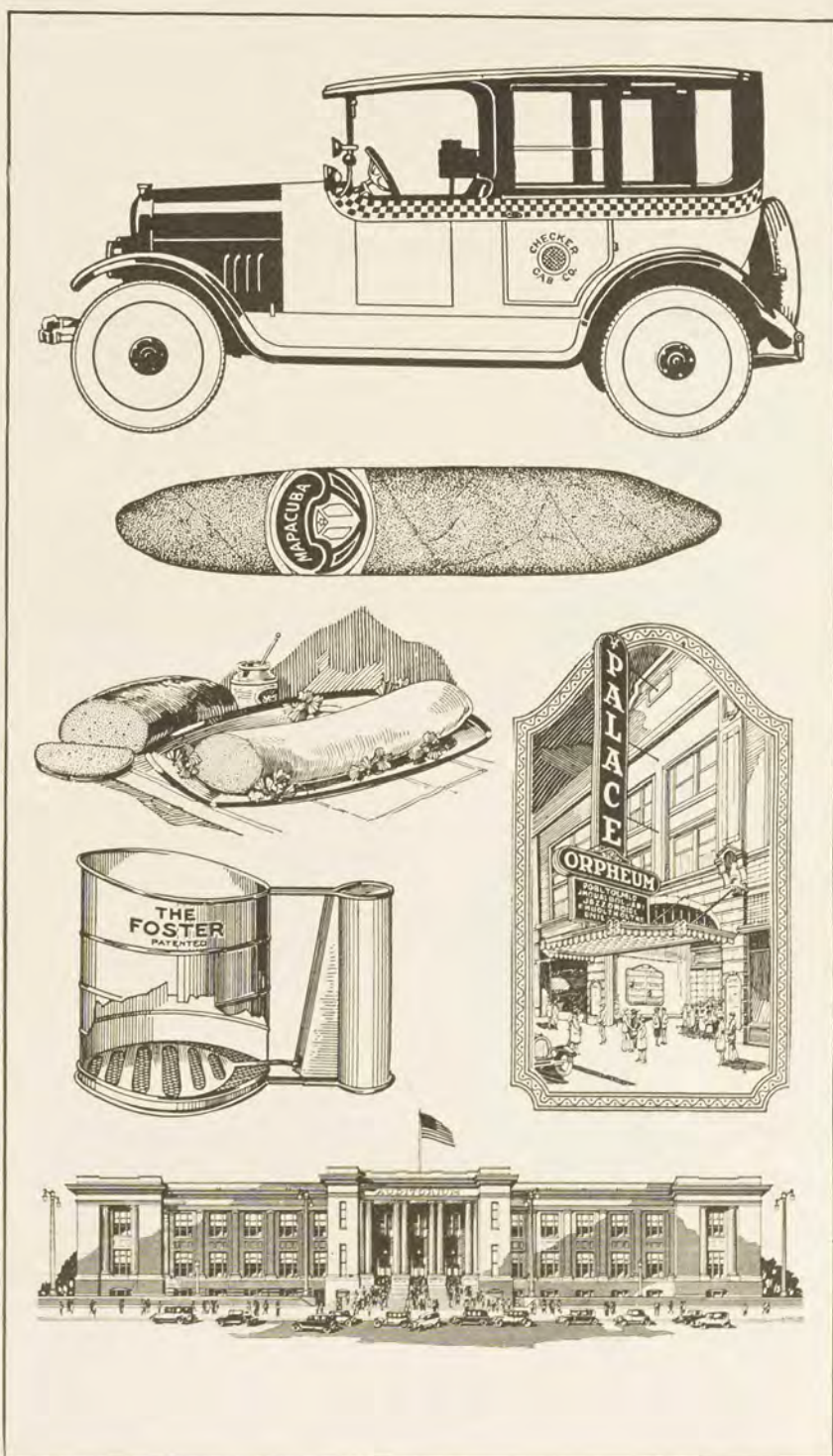


Plate 7

[Twenty-one]





sum it all up, any color with a great amount of red or yellow in its make-up will photograph black, and one with more blue in it will photograph white. It can be seen from this short explanation that it is always best to use pure black ink on white paper.

#### SIZE OF DRAWING

Drawings for reproduction are generally made larger than the reproduction is to be. One and one-half to two times the size of the reproduction is the general rule, although the size is really optional. It will, however, be best for the student to set a certain standard for himself, say two times the size, and then, in so far as possible, to adhere to that size. In this way he will learn the correct thickness of a line for a proper reduction. It is much easier to make a larger drawing than a smaller one, and the reduction of a larger drawing will not show the defects in a smaller one. A more finished reproduction will be the result.

#### PLANNING THE WORK

There are two kinds of pen drawing. Decorative or conventional, and realistic or free. Decorative drawings are made to ornament and enrich, the pictorial interest being secondary. They are made by the use of heavy outlines, some conventionalized forms and rather flat tones.

Realistic drawings are used to illustrate stories and to represent objects correctly in light and shade. They are made in a more or less sketchy way. Plate 6 shows a drawing made in the realistic and decorative style. This shows the difference between the decorative and the realistic drawings. It is often hard to tell at times if a drawing is realistic or decorative as the systems sometimes merge. The difference between the two drawings shown, however, is very marked.

Plate 7 shows several drawings of objects in a very simple style, which it would be well for the student to imitate in his first attempts in pen and ink drawing.

The drawings on Plate 8 are clipped from various magazines to give the student an idea of different ways in which pen and ink drawings are handled for advertising purposes.

[Twenty-three]

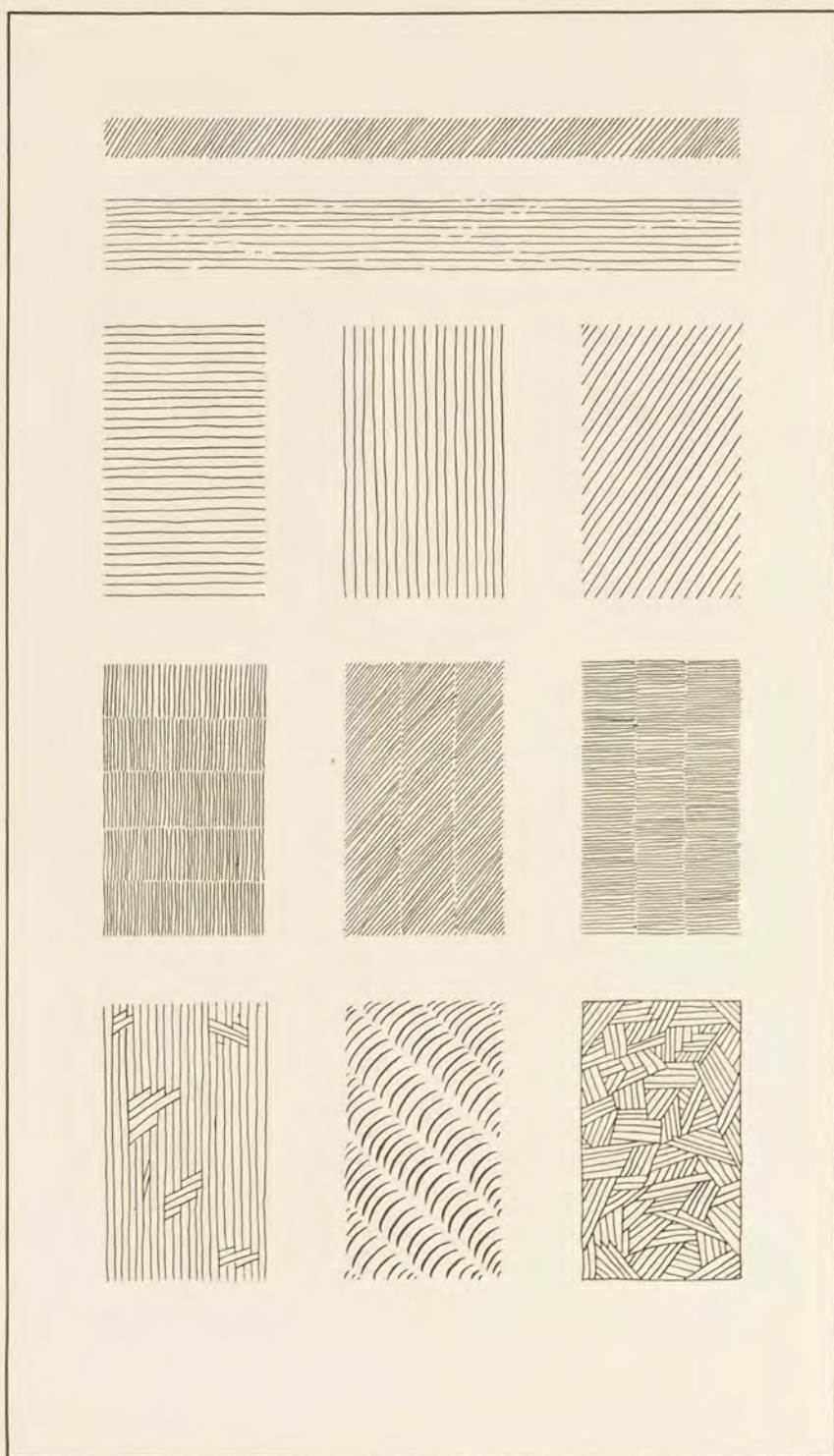






FIG. 1



FIG. 2

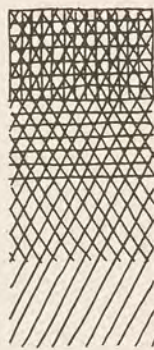


FIG. 3

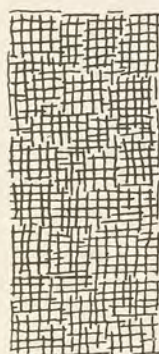


FIG. 4



FIG. 5

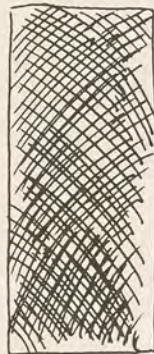


FIG. 6

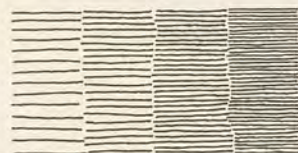


FIG. 7

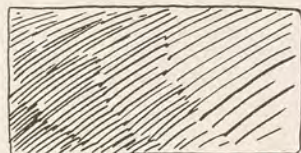


FIG. 8

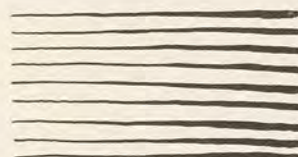


FIG. 9



FIG. 10



FIG. 1



FIG. 2



FIG. 3



FIG. 4



There are several other techniques or methods in the use of lines which will be explained in the following paragraphs.

#### CROSS HATCHING

By this method or technique, we mean the crossing of one set of lines over another. It is best not to have the lines cross directly at right angles, unless a decorative effect is desired, as this would tend to give the drawing a stiff or mechanical appearance. The lines may be crossed many times or they may be very close together, depending on the depth of shade to be expressed. Figs. 1 to 6, Plate 10, show several methods of cross hatching. Figs. 4 and 5 are recommended for decorative drawings, while Fig. 6 is the free method of cross hatching used by many cartoonists.

#### ACCENTED LINES

Lines which are fine at one end and heavy at the other are called accented lines. These lines are made by gradually bearing down on the pen and increasing the width of the lines. Figs. 7 and 8, Plate 10, show exercises in the use of increased lines.

#### INCREASED LINES

These lines are not crossed, but get their darker shadows by increasing the number of lines in the same direction. Figs. 9 and 10, Plate 10, show exercises in the use of increased lines.

#### DRAWINGS IN DIFFERENT METHODS

Fig. 1, Plate 11, shows a photograph of a drawing with copies of it done in pen and ink. Fig. 2 is drawn in the cross hatched method; Fig. 3, in the increased line method, and Fig. 4 in the accented line method. The student should study this plate carefully as it shows how a likeness can be held, even though a different method is employed.

#### DETAILS

Plates 12 and 13 are suggestions for handling various details, often found in drawings, in a simple manner. It would be well for the student to copy these two plates, if possible.

#### TECHNIQUES

Every time an artist uses a new technique which the people like, such as the techniques of Franklin Booth, James Montgomery Flagg, Charles Dana Gibson, Nell Brinkley and a host

[Twenty-seven]





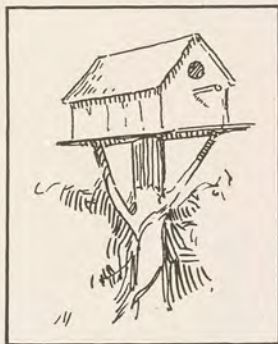
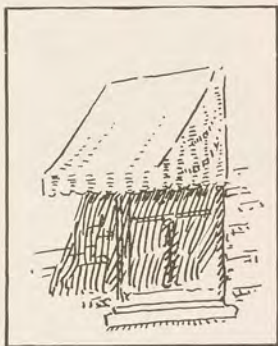
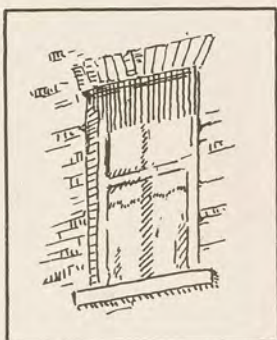




FIG. 1



FIG. 2



FIG. 3



FIG. 4



of others, immediately there spring up all over the country many imitators of the various styles. Although it is very good for a student to faithfully copy a drawing by one of the masters in this line, or to draw a picture of his own, using the master's technique, nevertheless he should try to develop a technique of his own.

#### METHODS FOR DIFFERENT KINDS OF PAPER

The method in which a drawing is to be finished is governed by the paper upon which it is to be finally printed. For coarse newspaper, cheap farm magazines, blotters, etc., the outline drawing is used. Drawings, which are to be reproduced on a medium grade of book paper, magazine stock, or for any medium rough paper, are finished in part shade. For very fine magazines and art editions, drawings in full shade are used. These three styles are shown on Plate 14. Fig. 1 shows the photograph from which the drawings were made. Fig. 2 shows the outline drawing, Fig. 3 the drawing in half shade, and Fig. 4 the drawing in full shade.

#### QUESTIONS

1. What is meant by cross hatching?
2. What are increased lines?
3. Explain the various kinds of drawings to be made for different papers.
4. Name the two kinds of pen and ink drawing.
5. Why do we make drawings larger than the finished reproduction is to be?
7. Why should colored paper not be used to draw on for reproduction?
8. Can line cuts be used to print on any kind of paper?

#### PROBLEMS

1. Practice the various strokes shown in the charts on Plates 9 and 10. These strokes should be practiced until firm, snappy lines can be obtained.
2. Make a copy of Plate 12 the same size.
3. Make a copy of Plate 13 the same size.
4. Draw three simple still life drawings using for the first, outline drawing, for the second, part shade, and for the third, full shade.
5. Make a realistic drawing of a still life.
6. Make a decorative drawing of the same drawing made for Problem 5.
7. Arrange a few books and a candle stick in an interesting position and draw this group using cross hatching.
8. Make a simple drawing using the increased line method.
9. Make a simple drawing using the increased accented method.
10. Make a drawing which is to be reproduced on blotting paper.

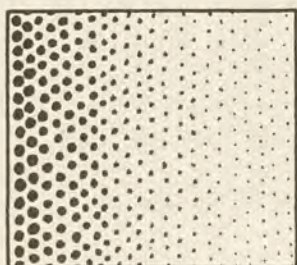


FIG. 1

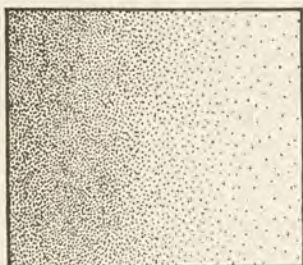


FIG. 2



FIG. 3

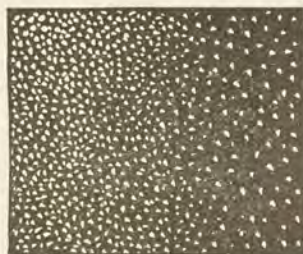


FIG. 4

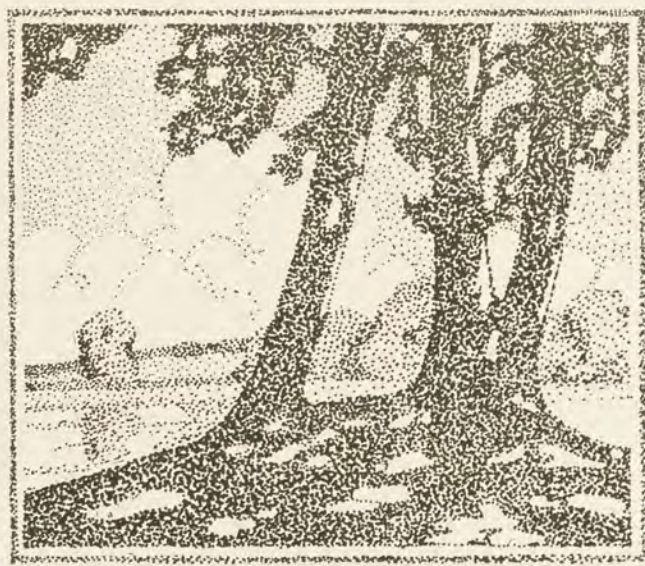


FIG. 5



## IV

### STIPPLE WORK

**T**HIS method is not in great use as it requires a great deal of time to produce, but very pleasing results can be obtained. The method is not very difficult, and with a little practice, the student should be able to do good work. The stipples are made with the point of the pen. Plate 15 shows different methods in stippling. Fig. 1 shows the set or uniform stipple. Fig. 2 shows the close stipple. This is perhaps the hardest to make as care must be taken not to run the dots together. Fig. 3 shows an example of the free stipple. The dots in this method of handling run together and it is the easiest to make. Fig. 4 shows white stipple on a black surface. This is a good method to gray or relieve a large black mass. Fig. 5 shows up very nicely in reproduction.

#### QUESTION

1. What are some of the different types of stipple called?

#### PROBLEM

1. Some simple group, such as a pail with a scrubbing brush next to it, or a cup and saucer, can be drawn for your work in stipple drawing.





## V

### SILHOUETTES

**A** SILHOUETTE is the best method for showing the form of an object and also the most simple way to see an object as a large mass.

The student must remember in drawing silhouettes that the outline is the most important part of this work. Action, feeling, and interest must be illustrated, even though the drawings show no detail, but only a solid black. The drawings for silhouette work must be very carefully outlined in pencil. Everything depends on this first drawing, so the student should be careful to make this his very best work. After the outline has been penciled, a small brush should be used to fill in the drawing up to the pencil mark with India ink. The student should work for a clean cut outline, but if he has gone over the line in any place the mistake can be corrected with Chinese white. Plate 16 shows examples of silhouettes of objects which may be found around any home. Plate 17 shows examples of more elaborate silhouettes clipped from various magazines.

#### WHITE SILHOUETTES

White silhouettes are started in exactly the same way as black silhouettes, but instead of filling in the drawing, the background is filled in with India ink, leaving the drawing white.

#### USES OF SILHOUETTES

The reason for taking up silhouettes at this time is to give the student a better understanding of how to see things in large masses. Silhouettes may, however, be used for illustrating stories, for cartoons, for decorative purposes, and for advertising.

#### WORKMANSHIP

Just as much care should be taken in drawing a silhouette as in making a most careful pencil drawing. It should be placed just as carefully on the paper as any other drawing.

[Thirty-five]

### QUESTION

1. For what can silhouettes be used?

### PROBLEMS

1. Make a drawing of a stew pan or kettle in silhouette.
2. Make a very careful drawing of a chair in silhouette.
3. Try to draw the profile of some friend in silhouette.
4. Make a white silhouette of any subject of your own choice.





Plate 17

[Thirty-seven]



FIG. 1



FIG. 2



## VI

### SILVER PRINT DRAWINGS

**O**FTEN the commercial artist is called upon to make a drawing of an intricate character, such as a mechanical device or textile design, which would require a great deal of time to execute. In such a case silver prints can be used.

#### METHOD

Take a sheet of silver print paper which may be bought at almost any photographic supply house, and on it print, from the negative or film, the picture to be drawn. After exposure to a strong light for about a minute, the sensitized silver print paper is washed in plain water which develops it.

In order that the print will not fade while it is being worked on, it can be fixed by dipping quickly in and out of a solution of acetic acid in the proportions of one ounce of acid to one ounce of water.

#### DRAWING AND BLEACHING

After the print is thoroughly dried, it can be worked on in pen and ink. This can be done in any technique desired, just as if a drawing were being made without the silver print foundation. Be very careful to use water-proof ink.

After the drawing is finished and the ink is thoroughly dry, the photograph can be bleached by using a solution of one ounce of cyanide of potassium to thirty-two ounces of water. After the photograph is bleached from the print, an ink drawing, which can be easily reproduced, will be the result. Fig. 1, Plate 18, shows a photograph, while Fig. 2, under it, shows a pen and ink drawing from a silver print of the photograph.

Changes can be made in the drawing for silver prints when necessary. It will be noticed that a pitcher is standing directly under the hand holding the cup. This was left out in the finished drawing because it attracts too much attention, is not essential to the product being advertised, and spoils an otherwise good composition.

#### QUESTION

1. Why do we make silver print drawings?

#### PROBLEM

1. Make a silver print drawing of any subject at all. Do your own printing and bleaching.

[Thirty-nine]

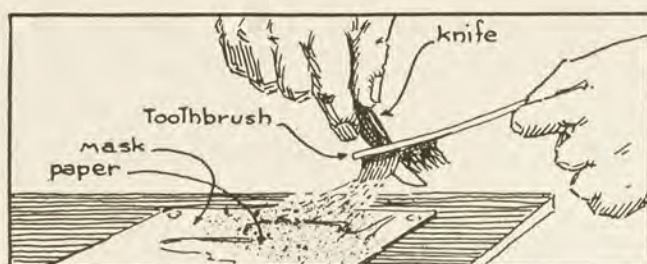


FIG. 1

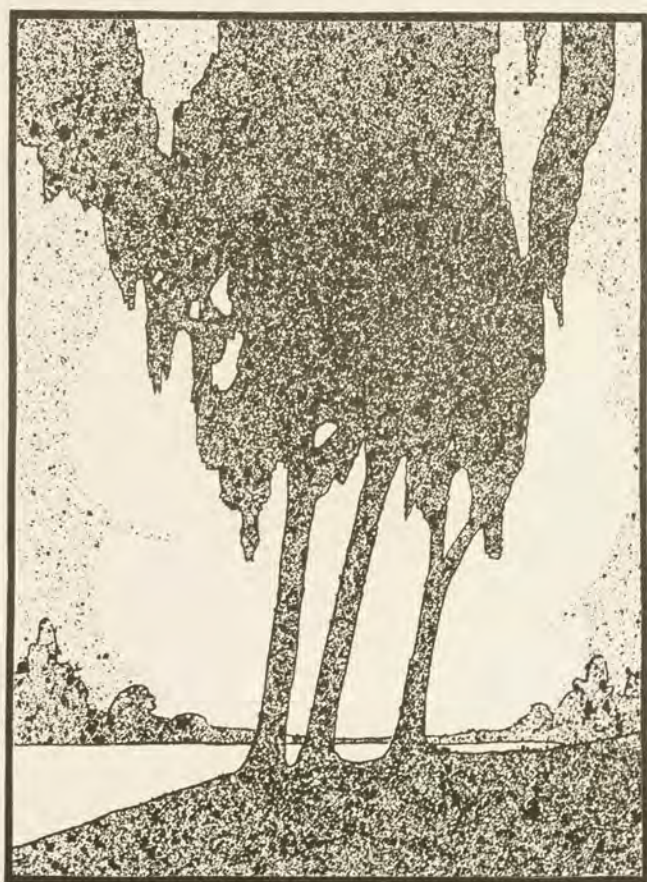


FIG. 2



## VII

### SPATTER WORK

**M**ANY novel effects are secured by spattering, which is a simple, but effective method.

A mask is cut to cover the surface of the paper not to be spattered. This mask is then held down with any handy weight.

To spatter the surface which is exposed, charge an old tooth brush with India ink, hold it at a suitable distance from the paper, and draw a knife edge across the bristles toward yourself. This will spatter the ink over the paper, and cover only those surfaces which are not covered by the mask. It is best to lay the paper to be spattered flat on the drawing table and not to hold the tooth brush directly over the drawing. This will prevent the large drops of ink from falling on the drawing. Various masks may be cut and the drawing covered up as the work progresses, thus producing different gradations in light and shade.

White ink may be used to spatter over a black surface, which will gray or subdue the black to pleasing tones.

There is no limit to the work which can be done by spattering, as for instance, backgrounds, clothes, trees, night scenes, etc. A little practice will demonstrate how comparatively easy it is to use this method. Fig. 1, Plate 19, shows how the brush and knife should be held, while Fig. 2 shows a picture finished in spatter.

#### QUESTION

1. Explain briefly how spatter work is done.

#### PROBLEM

1. Make a spatter drawing of some simple scene. Do not try to shade. Keep a flat poster effect.





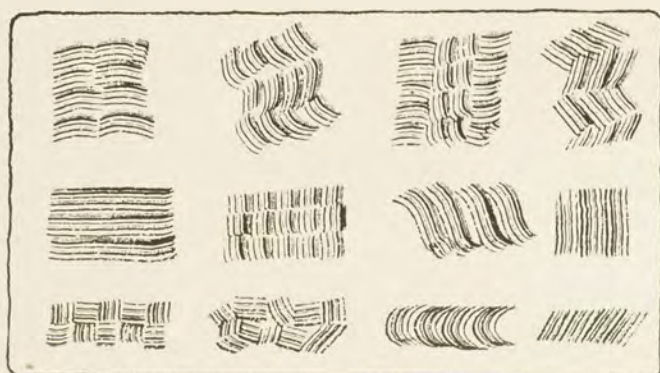
## VIII

### BRUSH DRAWING

**A** SMALL brush is often used in drawing instead of a pen. This gives a crisp effect which is quite novel and interesting. The drawing should first of all be very carefully laid out in pencil before the brush is used. Water-proof ink should always be used. See Plate 20 for two reproductions of brush drawings.

#### PROBLEM

1. Make a brush drawing of some simple scene.





## IX

### DRY BRUSH DRAWING

**A**NOTHER interesting method in the use of the brush in drawing is the dry brush method. The texture of the stroke is obtained by "splitting the brush." A small, red, sable brush should be dipped into the ink, and then drawn lightly over a piece of cardboard or blotter, which will remove the surplus ink. As the end of the stroke is reached, the brush should be lifted so that it divides or splits into a great number of tiny points. The brush is then ready for work. When the brush is used in this way, a fairly smooth piece of wedding bristol may be used, although a rough paper gives the best results. Plate 21 shows some brush strokes and a simple object drawn in dry brush using ink.

Another method in dry brush is to use lamp black instead of ink. In this case, lamp black is used quite thick, that is, not much water is mixed with it. A fairly rough water color paper should be used so that the texture of the paper will aid the student in his work. Plate 22 shows a finished example, such as would be used in an advertisement, drawn in dry brush using lamp black.

#### QUESTION

1. Why is it a good idea to use rough paper in dry brush work?

#### PROBLEMS

1. Make a copy of Plate 20.
2. Make a simple drawing in dry brush using ink.
3. Make a simple drawing in dry brush using lamp black.





## X

### PAPER BATIK

THIS method of drawing is one which is very interesting, because the artist never knows just how the finished picture will be. The effect, when the drawing is completed, is somewhat like a linoleum cut, although it has a certain charm of its own.

Working in this method will fill the needs of the commercial artist and the student for something new.

#### MATERIALS

The materials necessary are those which every art student and artist has, consisting of a few brushes, which depend on the size and technique of the finished drawing, a good grade of ink paper or illustration board, a bottle of Higgin's or some other good water-proof ink, a jar of Chinese white, and a small amount of some other color, preferably blue, if the work is to be reproduced by the line cut method.

#### METHOD

The first thing necessary is to make a careful drawing of the object to be worked in batik. The student should try to keep the drawing in big masses of light and shade. The fewer intermediate tones there are, the better and more striking will be the finished result. See Fig. 1, Plate 23.

The second step is to mix a quantity of Chinese white with just enough of the other color in it so that it can be easily seen when working on white paper. The brush should then be filled with this color and applied on the parts of the paper to remain white. This part of the paper should be thoroughly covered with the paint. This is absolutely necessary as will be seen later. Fig. 2 shows the second step.

After the Chinese white has dried, which takes only a few minutes, water-proof ink should be brushed over the entire surface of the drawing. This is done with a large brush, starting at the top of the paper, and drawing it quickly across the paper from left to right. This operation is continued until the entire

[Forty-seven]



FIG. 1



FIG. 2



FIG. 3



*R.J.M.*



drawing has been covered. The work should not be gone over a second time until the first coat has thoroughly dried, as the Chinese white might mix with the ink and thus spoil the labors of several hours.

After the ink has dried, which can be seen when it begins to crack where it covers the white, the drawing should be taken over to a faucet and the water allowed to run over it. This will help to wash off the ink where it covered the white and also to wash off the white. The large wash brush may be used at this time to help clean off the drawing. Care must be taken not to rub too hard or a nice clean surface will not be the result. See Fig. 3 for a finished batik in black and white. Plate 24 shows a batik drawing which has been used for commercial purposes.

#### QUESTIONS

1. Why must water-proof ink be used for paper batik?
2. Why should blue instead of some other color be mixed with the Chinese white?

#### PROBLEMS

1. Make a drawing of a scene in paper batik.
2. Make a still life drawing in paper batik. This drawing should be made to advertise men's hats.



Plate 24

Taken from "Fashions of the Hour," Marshall Field & Co., Chicago  
[Fifty]



## XI

### COLORED PAPER BATIK

**M**ANY interesting experiments can be tried in color when the work is not used for black and white reproduction.

A small amount of the colors the student wishes to use should be mixed in separate saucers with Chinese white, and these colors should be applied to the surface as mentioned before. After the colors have dried, ink is washed over the entire drawing the same as for the black and white batik. After the ink has been washed off, part of the color comes with it, leaving a drawing in black and very dainty tints.

#### PROBLEM

1. Make a flower study in colored paper batik.



2



11



16



17



302



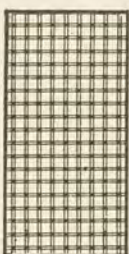
306



310



329



326



323



324



333



419 B



441



444



523



## XII

### THE BEN DAY PROCESS

THE Ben Day process takes its name from Benjamin Day, who invented the process of shading with a machine. This process is the transferring of tints from a gelatin film to the surface of the paper, negative, or metal plate. It is also used in lithographic work to transfer the tint to the lithographic stone.

By the use of the shading machine, shading, lining, and stippling can be done mechanically. This tedious work before had to be done by the artist directly on the drawing.

The principal feature of the shading machine is the gelatin film, mounted in a frame, which transfers the pattern to the copy or plate to be engraved. This gelatin film has the pattern engraved on one side of it in relief, and when this side is inked, it can be pressed down on the copy to be shaded, leaving an impression just like a rubber stamp. There is a great variety of these films. At the present time there are about 125 patterns. These patterns, however, can be combined by the clever tint layer into an almost unlimited number of designs.

When only a certain part of the copy is to be Ben Dayed, a thin paper rubber, covered and called a "frisket," is placed over the rest of the drawing. This prevents the ink from getting on that part of the drawing which is to be free from Ben Day work. After the transfer has been made, the frisket can be very easily removed.

The part of the drawing which is to be free from Ben Day work on the metal plate is covered with a water color solution called "gamboge." This acts the same as the frisket, and when the tint has been laid, the gamboge can very easily be washed off.

As has been said before, Ben Day tints may be laid either on the drawing, the negative, or the metal plate. When a drawing, however, is to be made several times larger than the reproduction, or where several reductions are to be made from the same

[Fifty-three]

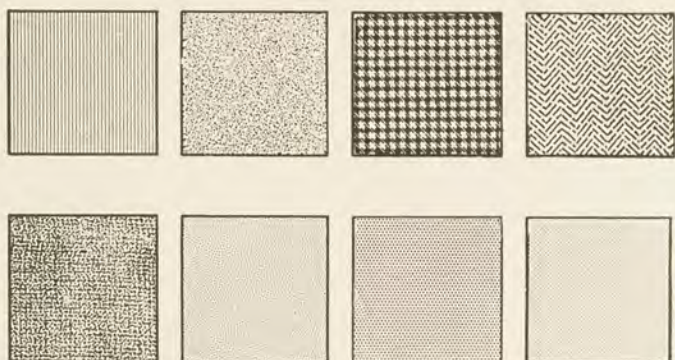


FIG. 1



FIG. 2



drawing, it is best to lay the tints directly on the plate. The reduction might make the dots or lines so small that the acid might etch them away. The parts not to be Ben Dayed are painted in with gamboge, a yellow water color.

When the negative is Ben Dayed, it must be remembered that the pattern will be in reverse. What is black, when the tint is laid directly on the drawing or metal plate, will appear as white when laid on the negative.

Screens can be obtained for all grades of work. There are straight line tints ranging from sixteen lines to two hundred and forty lines to the inch. The latter, however, can be used only on fine magazine stock. Nothing finer than 65 lines should be used for newspaper work.

Ben Day tints need not be used only in black and white work, but can be used to good advantage in line color work. By its use, several tones of each color can be obtained with one printing. For instance, if a solid red is used, by Ben Daying certain parts, light reds of all varieties, and pink, can be obtained. Any color can be toned down from the solid color to the faintest tints. By the combination of different tones and different colors, an almost unlimited number of effects can be produced. In this way a three or four-color effect can be secured.

Every commercial artist should become familiar with the Ben Day process, and a screen sample book from the Ben Day company should be in every studio. Artists should study this sample book and familiarize themselves with the different screens (Plate 25) and the effects which may be obtained when a combination of screens is used. Fig. 1, Plate 26, shows reproductions from eight of these screens, while Fig. 2 shows a drawing which has had some of these screens laid on. Plate 26a shows a reproduction the same size as the original drawing before the Ben Day tints have been laid on.



Plate 26 a



### XIII

#### DRAWING FOR THE BEN DAY PROCESS

THE drawings which are to be shaded, stippled, or lined by the Ben Day process, are usually drawn in pen and ink. All parts not to be shaded are finished in the regular way. If the spaces to be shaded do not conform to the outlines of the drawing proper, a thin guide line may be drawn for a guide in transferring the film. These guide lines may be removed or allowed to remain according to the wishes of the artist.

The different screens can be designated by number with a light blue pencil directly on the drawing, or better still, on a tissue paper flap covering the drawing.

It is best to make the drawing about twice the size of the reproduction, and have the Ben Day tint laid directly on the plate. In this way, a good result will be assured.

#### QUESTIONS

1. How can the different screens be designated on the drawing?
2. Where is the best place to have the Ben Day screen laid?
3. Where does the Ben Day process get its name?
4. Can Ben Day work be used in color?

#### PROBLEMS

1. Make two drawings to be reproduced with the Ben Day screen. Three different screens are to be used for each drawing. The finished drawing is to be reproduced on a page 6" x 9".





## XIV

### LINE COLOR PLATES

**P**RINTING with black on white paper is the most common method of reproduction, but often advertisers desire to show their product in its natural colors, and in that case color plates must be used. When a design or an illustration is to be printed in two or more colors separate plates will be needed for each color. Illustrations which are printed in color may be classified roughly in two groups, as line color plates, or half-tone color plates. Line color plates will be taken up in this chapter.

The zinc plates for color are reproduced exactly as the plates for black and white work, up to the point where the negative is printed onto the zinc. After this, special work on the plates is required. This special work may consist of routing out part of the plate, or of painting on the plate. These two processes will be explained later.

#### NUMBER OF COLORS

A job printed in color by the zinc line cut method may have an almost unlimited number of color, but for practical work the greatest majority are made from two to five colors. When more than five colors are needed, it is more practical to use some other process.

#### METHOD

In making printing plates for line color work, a negative is made from the drawing in exactly the same manner as for a one color line cut. For this negative, as many plates must be printed as there are to be on the job.

After the number of prints on zinc plates necessary for the complete color job have been made, it is necessary to separate the colors. For instance, if an illustration is to be reproduced in line, using two colors, red and black, it will be necessary to have two printing plates. Where the two colors do not touch each other, after two identical plates have been made, it

[Fifty-nine]

is only necessary to use the routing tool and cut away all of the red portions of the plate which is to be printed in black, and all of the black portions of the plate to be printed in red. The black plate is generally known as the key plate, while the red plate is known as the color plate. See Plate 27 for a drawing in which the color plates have been produced by routing. When these two plates are printed, they are so placed as to bring them in proper relationship with each other.

When the colors in the finished illustration are to touch or overlap, it becomes necessary to employ a different process. This is the work of the color separator. Suppose a three color job is to be printed, using orange, blue and black. After the three zinc plates, which are needed for three colors, have been printed, the color separator must see to it that the plate which is to print orange has the black and blue portions removed, and the plate which is to print black has the orange and blue removed. This is done by painting the parts which are wanted on the plate with etching ink and scratching away those lines or areas which are not wanted. The part covered with the etching ink will be protected from the acid, while the other part will be eaten away. Plate 28 shows the original drawing and the plates necessary to produce the three color poster in blue, orange and black.

#### BEN DAY IN COLORS

The Ben Day shading machine makes it possible to get various shades and tints of one color at the same printing. It is possible in this way to get quite a range of colors by using three colors and printing one color over another. For instance, printing a light yellow over a light blue makes quite an effective green. Ordinarily, however, in line color plates, the refined effects are obtained by keeping the colors flat and decorative. Plate 29 shows the original drawing and the number of plates necessary to complete a line color job, using blue, yellow, red and black in connection with the Ben Day shading machine.



## DRAWING FOR LINE COLOR PLATES

THE first thing to do when making a drawing for the line etching process in color is to make what is known as a "color sketch." This color sketch is to serve as a guide for the color separator, and is also made to show to the advertiser for his approval. It is impossible, however, to make a line cut from a color sketch, and for that reason it is always necessary to make what is known as a "working drawing."

The working drawing should always be made in intense black on pure white paper. The black and white drawing will generally carry the outline and shading in the illustration and is known as the key plate when etched.

Color tints should never be floated directly on the working drawing. The reason for this has been explained in the chapter on line cuts. Either a separate color sketch should be made, which is the best method, or a piece of heavy tracing paper can be pasted to the top edge of the working drawing, and the color scheme shown on this. If Ben Day tints are to be used, a light wash can be placed on the tracing paper flap directly over the part to be shaded, and the number of the tint designated. It is never necessary to try to show the actual pattern on the drawing. A very fine tint could not be used on a coarse newspaper stock.

The working drawing may be made to an enlarged scale, that is, it may be made larger provided the same proportion of the color sketch is maintained. *The working drawing must show in outline all the various parts of the illustration. All of the shades, shadows, and each color area must be outlined in black to give the color separator something definite from which to work.* Plate 28 shows a working drawing, the color plates, and the finished colored illustration.

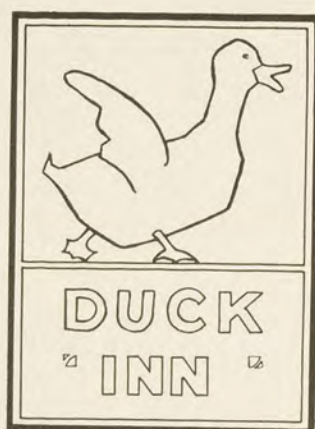


FIG. 1



FIG. 2



FIG. 3

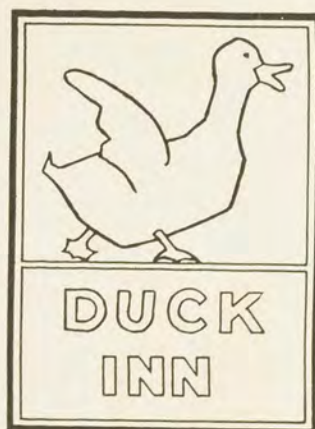


FIG. 4

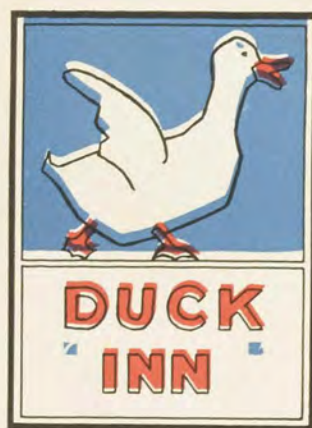


FIG. 5





### MIXING COLORS FOR THE COLOR SKETCH

More than two colors can be obtained when using only two colors as a basis. For instance, if a color sketch is to be made using only two colors, red and green as the basic colors, then by mixing these two colors together, a brown would be the result. The same thing would happen with printers' ink. If a red were printed over a green a similar brown would be the result.

Care must be taken when mixing colors to be sure that all of them can be produced by the basic colors. If, instead of using brown, a purple is to be used it will necessitate the making of another plate and will also mean an additional impression at the printers. This will, of course, mean added expense to the advertisers, something which the artist, if he wishes to be popular with the advertisers, should guard against.

It should be thoroughly understood that in making drawings for line cuts in color, the finished reproduction is not limited to solid colors, or solid colors superimposed, but tints of each color secured by the Ben Day process can also be superimposed and many different colors secured.

This may seem very hard at the beginning but continued practice and a visit to some photo engraving house, if possible, will help the student to get the result he wishes.

### QUESTIONS

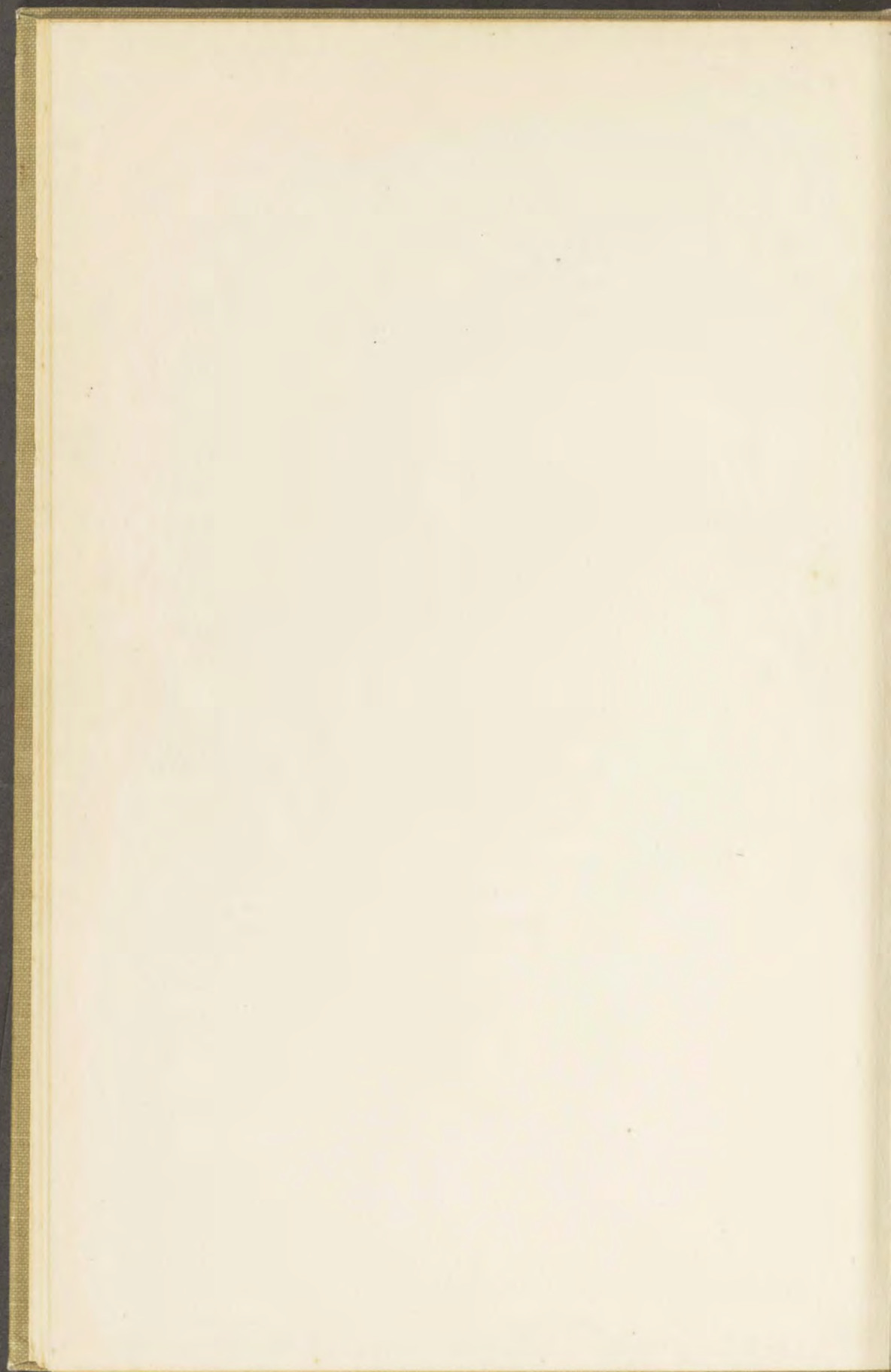
1. Explain how many colors can be used in this method.
2. Explain the two ways in which line color plates can be made.

### PROBLEMS

1. Make a drawing for a line color plate that is to be reproduced by routing.
2. Make a drawing for a line color plate that must be reproduced by painting.
3. Make a drawing to be reproduced in three colors and black using the Ben Day screens.



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